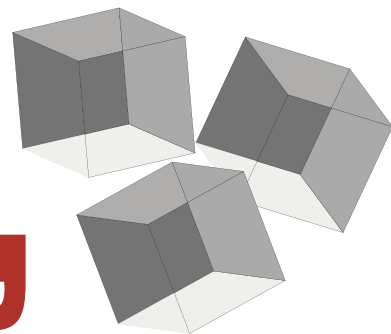
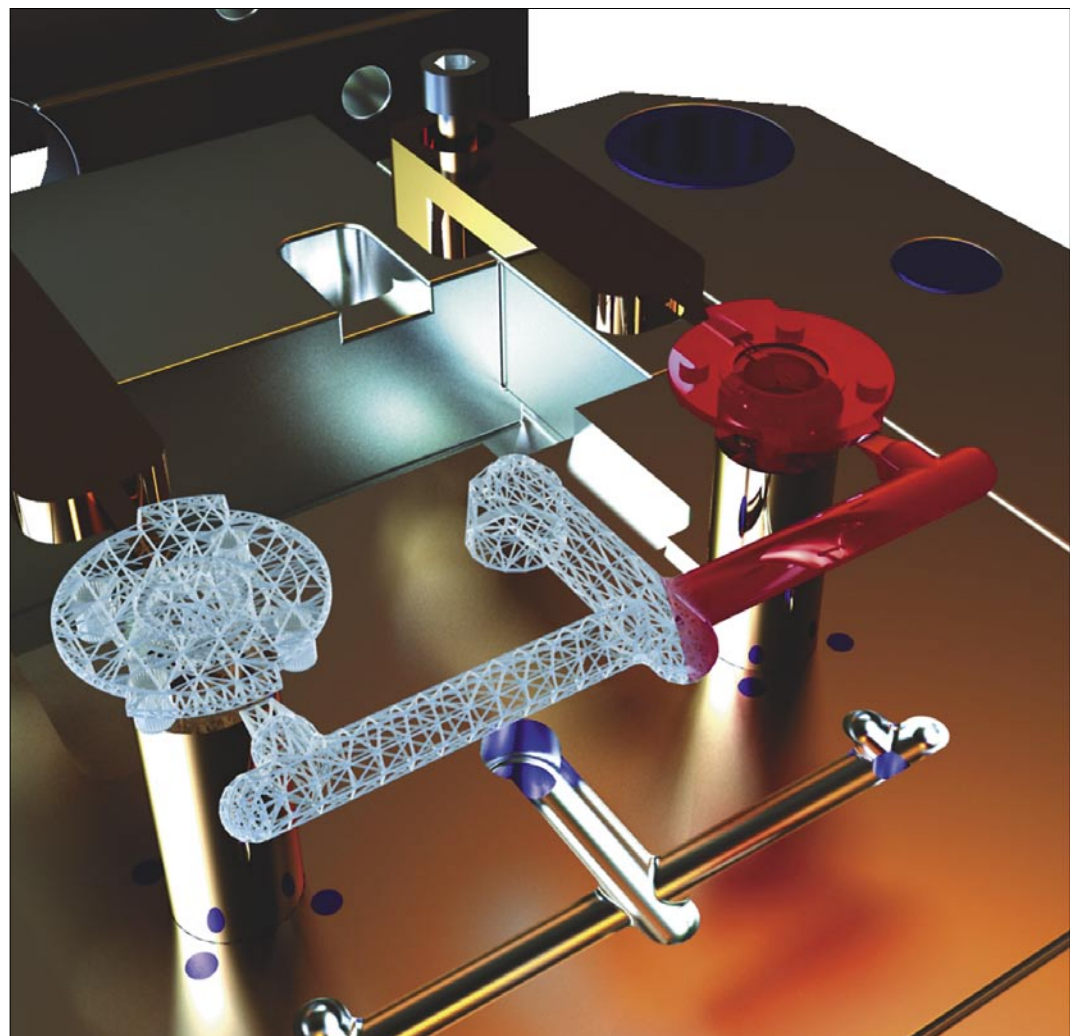


# Attention, CAD Shoppers



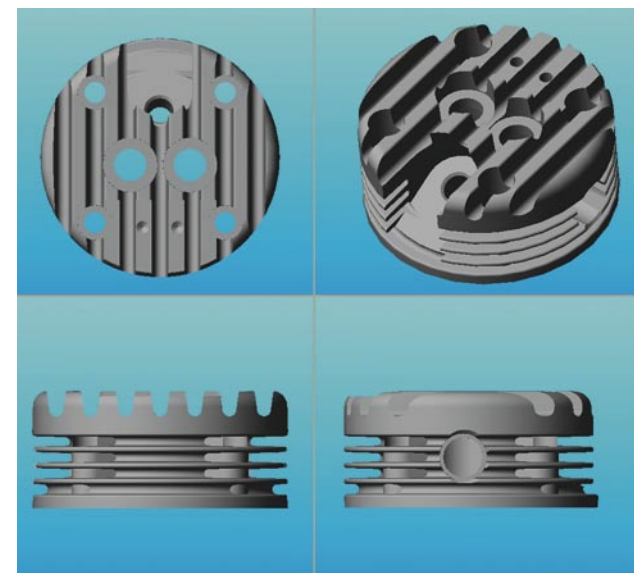
Advice for buyers of 3-D CAD software.



SolidWorks software integrates with CAM programs to automatically create toolpaths, such as those used to machine this plastic injection mold.



Three-D CAD software allows various sections of this globe valve to be viewed, as well as its overall design.



Alibre Design Expert software produces multiple 2-D views of parts for recordkeeping purposes.

**M**ore and more machine shops and contract manufacturers are being asked to design the parts they machine for customers. Many make do with traditional drawings or 2-D CAD software. An investment in 3-D CAD software, however, would let them produce designs for less.

The number of customers supplying 3-D files is rising, and not being able to translate these files may limit growth. Moreover, the ability to work with 3-D CAD files lets a shop add value, increasing its appeal to existing and potential customers.

What first-time buyers of CAD software don't know can hurt them. Smaller companies looking to buy 3-D CAD software should consider a system appropriate for their size—not the large-scale enterprise systems designed for the Fords and GMs of the world.

SolidWorks Corp. and Alibre Inc. are two developers of 3-D CAD software popular with smaller companies. They, along with users of their systems, offered suggestions about what to look for when buying software and what pitfalls to avoid.

#### Ease of Use

If you're considering the purchase of a 3-D CAD system, SolidWorks, Concord, Mass., and Alibre, Richard-

son, Texas, agree that the most important thing is to find a provider that speaks your language. The provider should know what it means to set up a part, not just be knowledgeable about programming.

Fielder Hiss, manager of SolidWorks' product management team, pointed out that for many smaller manufacturers, designing parts is not a full-time job. Whoever will be working with the system you choose should be able to learn it quickly without special training and be able to maintain familiarity with it even if used infrequently.

Another thing to look for is ease

of making design changes, Hiss said. Make sure the system allows you to change one or two elements in a part or fixturing design without having to re-create the entire design.

The CAD program selected should also work with—or be easily made to work with—your existing CAM program. After any design is produced and approved, the parts have to be made. A CAD program that enables direct importation of design files into a CAM program saves valuable time and, therefore, money.

To ensure this direct importation, the developer of the CAD system you are considering should have a partnership with major CAM developers.

#### The following companies contributed to this report:

**Alibre Inc.**  
(972) 671-8492  
www.alibre.com

**SolidWorks**  
(800) 693-9000  
www.solidworks.com

**St. Louis Designs Inc.**  
(800) 431-6684  
www.saintlouisdsgns.com

**Sterling Technologies Inc.**  
(802) 888-8490

#### Take a Test Drive

Many CAD software developers let you try out their products, although how they do it varies. Alibre, for example, supplies potential customers a free parametric, solid-design program called Alibre Design Xpress. It doesn't incorporate all the features of a full Alibre Design program, but enough of them to meet the needs of smaller machine shops and to allow potential buyers to get a feel for the full-blown system.

"That opportunity to try it out works to everyone's advantage," said Greg Milliken, Alibre's president and CEO. "It helps customers by

## attention, cad shoppers

increasing their familiarity with the programs and their comfort level with us. It helps us by making them more knowledgeable about Alibre Design and more likely to move up to a more complete version.”

SolidWorks takes a different approach. It doesn't believe in “throwing software at potential customers,” said Hiss, but it does invite them to test-drive the company's system at a SolidWorks reseller, where they can get answers to all their questions. It has also developed a streamlined SolidWorks Personal Edition, available free under a 6-month license for noncommercial, “get acquainted” use.

### Keep It Practical

Alibre and SolidWorks discourage smaller manufacturing companies from buying extensive systems incorporating features they will never use, or programs so complex that running them would “burn hardware,” as one user put it.

Developers sometimes incorporate process management modules into their systems, for instance. These are business-oriented programs not directly related to design or manufacturing, and are probably not worth the investment for smaller manufacturers. They may, in fact, be distractions.

However, developers warn that shoppers should also not think so narrowly that they buy software that only develops 3-D designs.

“Even when shops design in 3-D,” said Hiss, “they still have to deliver 2-D drawings to customers with their finished designs and products, primarily for the customers' records. They should make sure the programs they buy can do that efficiently and cost-effectively, so they don't have to create them on another system,” which adds cost and time to the process.

While it's wise to avoid buying unnecessary capability, the program you do buy should be expandable to meet the needs of your future plans and your growing customer base.

Most packages include periodic new releases in the original cost of the product. These are commonly issued to improve the performance of the software already purchased, or to fix glitches detected after its release.

But think beyond that, to where you want your company to go and what software capability you will need to do that. Can the software you are considering be expanded easily and cost-effectively to accommodate your growing needs? Or, can you trade up to the capability you will need next year at a reasonable cost?

Many developers offer products for several levels of performance, making them easy to upgrade. Alibre offers Alibre Design, Alibre Design Professional and Alibre Design Expert. Each level adds software features that increase functionality. To the basic Alibre Design parametric design software, Professional incorporates functions for sheet-metal design and data management. On top of that, Expert adds programs for mechanical simulations and CAM programs for CNC milling.



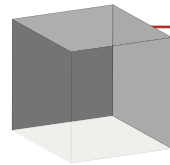
St. Louis Designs

SolidWorks sells its core design software, but also offers SolidWorks Office Professional, which features additional capabilities suitable for smaller manufacturers. It includes tools like geometric part validation, which identifies errors in incoming designs; a feature-recognition function; and a function that validates 2-D documentation, ensuring that it meets company standards.

**St. Louis Designs turned to a SolidWorks' user group for help in designing this intricate part using SolidWorks 3-D CAD software.**

### Find Support

Matt St. Louis of St. Louis Designs Inc., an Austin, Texas, maker of specialty parts and fittings used in the outfitting of



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privately owned passenger aircraft, strongly recommends that CAD shoppers talk with actual users of the system they are considering, not just the software developer's salespeople.

“SolidWorks resellers are honest, helpful and knowledgeable,” he said, “but they have an agenda—the same one all software developers have—to sell you their product. I found it reassuring to talk with users of the software in businesses like mine for a more objective evaluation.

“And, SolidWorks was open about referring me to these users,” said St. Louis.

Alibre's Web site includes a user forum accessible to any visitor. The forum addresses questions ranging from software evaluations to practical design problems. Users from around the world contribute. While all are current Alibre users, many have experience with other systems, and comparisons are frequent.

A key consideration is the support system that the software developer or reseller offers. Do you call an 800 number and wait for an available anonymous “expert,” or is there

more direct assistance available?

Jeff Walker, manufacturing engineer at Sterling Technologies Inc., a Morrisville, Vt., contract-parts manufacturer, has found Alibre consultants responsive. He can send an e-mail describing his problem to the consultants day or night. Because they are located in different parts of the world, timely help always is available.

St. Louis found that SolidWorks resellers were helpful to the extent that, if they couldn't assist him, they would refer him to other resellers who had customers with similar design challenges. He also finds SolidWorks' user-group meetings helpful. At these meetings, designers and engineers gather to solve problems and exchange tips.

“Those [attending] are not computer geeks with theoretical knowledge,” he said, “but people actually using the systems commercially. They make a powerful resource.”

Both St. Louis and Walker agree that ready access to

these knowledgeable resources is valuable. Only a person with experience using a software package can reliably evaluate it. This is another good reason to talk with current users before buying.

Buying 3-D CAD software is not all that different from buying a new car, as long as the shopper is aware of what the equivalent tests are to kicking the tires, looking under the hood and taking “a spin around the block.”

The most important thing to remember, say experts, is to resist the temptation to base your purchasing decision on a system's “sizzle” instead of its suitability. △

### About the Author

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